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Magnetic Relaxation in a Ag-sheathed High Jc-Bi-Pb-Sr-Ca-Cu-O Superconducting Tape

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Abstract

The magnetic relaxation and magnetization curves were studied on the Ag-sheathed and highly c-axis oriented Bi Pb Sr Ca Cu O tape with transport Jc > 104 A/cm2 at 77 K. Zero-field-cooled (ZFC) in-field relaxation for applied field perpendicular to the sample a-b plane was investigated. It was found that the field-dependent relaxation rate had a maximum in the certain applied field at various temperatures. The applied field at this maximum was greater than H□, the first field for which currents flow through the entire volume of the sample in the Bean's critical state model. Pinning energies were estimated at the maximal relaxation rate in a series of temperatures.